

Serial No. 09/756,956
Inventor(s): Cliver et al.

USPTO Customer No. 25280
Case No.: 2960

REMARKS

The courtesy and consideration of Examiner Kumar and Examiner Einsmann during the interview with Applicant's representative and inventor James Cliver on May 13, 2004 is acknowledged with appreciation. During the interview, the amendments included herein were discussed with the Examiners, and it was agreed that these amendments would place the application in condition for allowance. Specifically, it was concluded that the claims as amended would be allowable over all of the prior art of record, in addition to U.S. Patent No. 5,066,535 to Christie, which was applied in connection with examination of the product claims in divisional application Serial No. 10/396,899. (Incidentally, claims 43-51, which were previously withdrawn from consideration following a restriction requirement, have now been officially canceled since they are pending in this divisional application.)

Claims 1-8, 17, 20, 22, 25-26, 28, 30, 34, and 36-37 were rejected under 35 USC 103(a) as being unpatentable over Crenshaw (US 5,861,044) in further view of Bouwknegt et al (US 4,859,207) for the reasons discussed in paper no. 7. During the interview, it was agreed that Crenshaw fails to disclose the invention as currently claimed. Specifically, it was discussed that Crenshaw fails to disclose or suggest the exposure of substantially the entire fabric (i.e. substantially the entire planar dimension, or in other words, substantially the entire fabric surface) to a dye, rather, Crenshaw describes a process of carving a pattern on a pile fabric by printing a liquid repellent on a pile fabric in a pattern, finishing the fabric, rewetting the fabric with a liquid, and then exposing the fabric to a pressurized heated gas, which selectively carves the dry areas

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printed with the liquid repellent and leaving the wetted areas protected and uncarved (Col. 1, lines 21-30.) The portion of the patent relied upon in the rejection is the recitation in Claim 6 of the Crenshaw patent, which describes a multi-step process of applying a first chemical solution comprising a liquid repellent to a surface of the web of fabric, applying a second chemical solution comprising a dye to the surface of the fabric, applying liquid to the fabric and directing pressurized heated gas, to carve the surface of the fabric where the liquid repellent was applied. Reference to the specification shows that this claim is directed to the process described in Fig. 3, which uses a series of screen print heads to create a pattern. As set forth in Col. 3, line 50 to Col. 4, line 26, each of the chemical applications is performed in a pattern. Crenshaw specifically requires the use of pressurized heated air to modify the treated fabric, and achieves the effect by partially melting the fiber. Bouwknegt teaches the use of a chemical reaction to block the dyeing of polyamide fabrics. It is the *chemical bonding* of chemical to fabric that allows the patterning.

In contrast, the instant invention is directed to a process for creating patterned fabrics using dye processes previously used for dyeing solid fabrics. In other words, substantially the entire fabric surface is exposed to the dye, while in Crenshaw, only a patterned portion of the fabric is exposed to the dye, which may or may not correspond with the patterned areas that have been treated with the liquid repellent. The process of the invention is not reliant on a chemical reaction to achieve the patterned effect; rather it utilizes a novel physical bonding mechanism that prevents the treated regions from becoming fully saturated, in combination with the step of exposing substantially the

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entire fabric to the dye. Furthermore, Bouwknegt is limited to polyamide fabrics and only allows the use of anionic dyestuffs, while the process of the invention is not limited in these ways. There is no disclosure or suggestion in the references, taken alone or in combination, of a process such as that set forth in the claims. Therefore, it is respectfully requested that the rejection be withdrawn.

Claims 21 and 35 were rejected under 35 USC 103(a) as unpatentable over Crenshaw and Bouwknegt et al. as applied to claims 1-8, 17, 20, 22, 25-26, 28, 30, 34, and 36-37 and further in view of Hauser et al. (US 5,667,533) for the reasons set forth in paper no. 7. Claims 3, 4, 6, 9, 14, 16, 27, 29 and 31 were rejected under 35 USC 103(a) as being unpatentable over Crenshaw and Bouwknegt et al. as applied to claims 1-8, 17, 20, 22, 25-26, 28, 30, 34, and 36-37 and further in view of Egli et al (US 3,743,477) also as set forth in paper no. 7. Claims 10-13, 15, 18-19, 23-24, 32-33 and 38-42 were rejected under 35 USC 103(a) as being unpatentable over Crenshaw and Bouwknegt et al. as applied to claims 1-8, 17, 20, 22, 25-26, 28, 30, 34, and 36-37 and further in view of Fadler nee Jack et al. (US 4,023,925.) It is believed that these claims are allowable for the reasons set forth with respect to the independent claims and discussed in the interview.

In addition, Applicants have submitted herewith an Affidavit under Section 1.132 from James D. Cliver, an inventor in this application. (A duplicate affidavit is being filed in connection with the divisional application, and the Examiner requested its inclusion in the instant application for its relation to the Christie patent. However, it is noted that no

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rejections based on the Christie patent have been made in connection with this application, nor has there been any assertion that the Christie patent impacts the patentability of the instant application.) In this affidavit, Mr. Cliver describes the comparative testing he did between a substrate processed according to the instant invention, as compared with one processed according to commonly-assigned U.S. Patent No. 5,066,535 to Christie, and to the same substrate dyed as a control fabric. As illustrated, the fabrics processed according to the method described in the instant application did not have the strength loss experienced by the fabrics processed according to the process described in the Christie patent.

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CONCLUSION

In light of the above amendments and remarks, applicant submits that the claims are in condition for allowance, and request that the outstanding rejections be withdrawn. If a telephone conference would expedite allowance of the claims, the examiner to telephone Applicants' Attorney at (864) 503-1596.

Applicants believe that an extension of time fee of \$ 950.00 is due, and the Commissioner is hereby authorized to charge this amount to Deposit Account No. 04-0500. If the USPTO determines that a further fee is due, the Commissioner is hereby authorized to charge any additional fee to the same account.

Respectfully submitted,



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Application of: Cliver et al.
 Serial Number: 09/756,956
 Filed: January 9, 2001
 For: PROCESS FOR PATTERNING TEXTILE MATERIALS, AND FABRICS
 MADE THEREFROM
 Group Art Unit: 1751
 Examiner: Preeti Kumar

Commissioner for Patents
 PO Box 1450
 Alexandria VA 22313-1450

Certificate of Transmission
 I hereby certify that this correspondence is being
 facsimile transmitted to the United States Patent and
 Trademark Office to 703-872-9306.

Date: May 18, 2004

Signature: Heidi M. Lewis

Name: Heidi M. Lewis

Sir:

AFFIDAVIT BY JAMES D. CLIVER

1. My name is James D. Cliver and I reside at 419 West Abington Way, Spartanburg, SC 29301.
2. I am a Senior Research Chemist for Milliken and Company and have been employed by Milliken and Company since September 1992.
3. I am generally experienced in the dyeing and finishing of textile fabrics and spent over 6 years working in a dyeing facility.
4. I have a Bachelor of Science in Textile Chemistry from Clemson University, which I received in 1989.
5. I am one of the Inventors of the invention disclosed and claimed US Serial No. 10/396,899, filed on March 25, 2003, titled "Process for Patterning Textile Materials, and Fabrics Made Therefrom".
6. I conducted the fabric processing and testing as follows: a 65% polyester, 35% cotton 4.3 ounce/square yard plain woven poplin fabric of the variety used to manufacture conventional uniform shirt fabrics was obtained. Samples of the fabric were then processed as follows. All of the fabrics were dyed using the same dye formula and Samples 2 and 3 were actually dyed in the same dye bath simultaneously.
7. I took Sample 1 after it has been desized, scoured, and dried in a conventional manner, and dyed according to a conventional thermosol dyeing process, scoured and dried.
8. I processed Sample 2 in the manner described in Example 1 of U.S. Patent No. 5,066,535 to Christie, taking it after desizing, scouring, drying, padding on of the fluorochemical, drying, patterning by high velocity water streams, and a conventional thermosol dyeing process, scouring and drying.

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9. I processed Sample 3 according to the instant invention, Sample E. Specifically, the fabric was taken after desizing, scouring, drying, rotary screen printing with fluorochemical, drying, and a conventional thermosol dyeing process, scouring and drying.

10. The filling tensile strength (which is the critical strength test for these types of fabrics) was tested for each of the samples according to ASTM D-5034-95. I calculated the % strength gain/loss for Samples 2 and 3 by dividing the strength by the control strength, multiplying by 100% and subtracting that number from 100%. The results were as follows:

	Sample 1	Sample 2	Sample 3
Filling tensile	74 lbs	62 lbs	74 lbs
Strength gain/loss	-----	(16.2%)	0.0%

I also noted a hand difference between the samples, with Sample 2 having greater surface roughness than the other samples.

11. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. §1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.



James D. Cliver